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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,266	01/18/2002	Bruce Ferguson	5650-02100	7646

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EXAMINER	
ABEL JALIL, NEVEEN	
ART UNIT	**PAPER NUMBER**
2165	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/051,266	FERGUSON ET AL.	
	Examiner	Art Unit	
	Neveen Abel-Jalil	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-12,15-22,25-32 and 35-40* is/are rejected.

7)☒ Claim(s) *3-4, 13-14, 23-24, 33-34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/11/03,6/19/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 5-12, 15-22, 25-32, 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnhill et al. (U.S. Patent No. 6,714,925 B1) in view of Lundahl et al. (U.S. Pub. No. 2002/0107858 A1).

As to claims 1, 11, 21, and 31, Barnhill et al. discloses a data preprocessor for preprocessing input data for a support vector machine (See Barnhill et al. column 37, lines 7-50), wherein the input data include one or more outlier values, comprising:

an input buffer which is operable to receive and store the input data (See Barnhill et al. column 18, lines 36-60);

an output device for outputting the corrected input data, said corrected input data comprising the input data to the support vector machine (See Barnhill et al. column 18, lines 25-35).

Barnhill et al. does not teach a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input data.

Lundahl et al. teaches a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input data (See Lundahl et al. page 3, paragraph 0064, also see Lundahl et al. page 5, paragraphs 0097-0098).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Barnhill et al. to include a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Barnhill et al. by the teaching of Lundahl et al. to include a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input data because it provides accuracy and more normalized results of data being searched and calculated.

As to claims 2, 12, 22, and 32, Barnhill et al. as modified discloses wherein the support vector machine comprises a non-linear model having a set of model parameters defining a representation of a system (See Barnhill et al. column 15, lines 57-67, and see Barnhill et al. column 16, lines 1-22, also see Barnhill et al. column 60, lines 24-41), said model parameters capable of being trained;

wherein the input data comprise training data, wherein said corrected data comprise corrected training data including corrected target input data and corrected target output data (See Barnhill et al. column 17, lines 1-46); and

wherein the support vector machine is operable to be trained according to a predetermined training algorithm applied to said corrected target input data and said corrected

target output data to develop model parameter values such that said support vector machine has stored therein a representation of the system that generated the target output data in response to the corrected target input data (See Barnhill et al. column 15, lines 57-67, and see Barnhill et al. column 16, lines 1-22, also see Barnhill et al. column 60, lines 24-41).

As to claims 4, 14, 24, and 34, Barnhill et al. as modified discloses wherein said control parameters are usable to determine control inputs to said system for run-time operation of said system (See Lundahl et al. page 16, paragraph 0265).

As to claims 5, 15, 25, and 35, Barnhill et al. as modified discloses wherein the data filter is further operable to replace said one or more outlier values with replacement values, wherein said corrected input includes said replacement values (See Lundahl et al. page 5, paragraphs 0095-0096, also see Barnhill et al. column 21, lines 44-67, also see Barnhill et al. column 22, lines 1-14).

As to claims 6, 16, 26, and 36, Barnhill et al. as modified discloses wherein the data filter is operable to replace said one or more outlier values using one or more of clipping, interpolation, extrapolation, spline fit, and sample/hold of a last prior value (See Lundahl et al. pages 13-14, paragraph 0234).

As to claims 7, 17, 27, and 37, Barnhill et al. as modified discloses further comprising:

a graphical user interface (GUI) which is operable to receive user input specifying one or more data filtering operations to be performed on said input data, wherein said one or more data filtering operations operate to remove and/or replace said one or more outlier values (See Lundahl et al. page 5, paragraphs 0097-0098).

As to claims 8, 18, 28, and 38, Barnhill et al. as modified discloses wherein said GUI is further operable to display said input data prior to and after performing said filtering operations on said input data (See Barnhill et al. column 22, lines 58-67, and see Barnhill et al. column 23, lines 1-7).

As to claims 9, 19, 29, and 39, Barnhill et al. as modified discloses wherein said GUI is further operable to receive user input specifying a portion of said input data for said data filtering operations (See Lundahl et al. page 19, paragraph 0322).

As to claims 10, 20, 30, and 40, Barnhill et al. as modified discloses wherein the input data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of data wherein each of said variables comprises an input to said input buffer (See Lundahl et al. page 17, paragraph 0293); and

wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the support vector machine (See Barnhill et al. column 35, lines 1-57).

Allowable Subject Matter

3. Claims 3-4, 13-14, 23-24, and 33-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of allowable subject matter:

The prior art of record (Barnhill et al. -U.S. Patent No. 6,714,925 B1-and-) do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim),wherein the support vector machine comprises a non-linear model having a set of model parameters defining a representation of a system, wherein said model parameters of said support vector machine have been trained to represent said system; wherein the input data comprise run-time data, and wherein said corrected input data comprise corrected run-time data; and wherein the support vector machine is operable to receive said corrected run-time data and generate run-time output data, wherein said run-time output data comprise one or both of control parameters for said system and predictive output information for said system, as claimed in claims 3, 13, 23, and 33.

Claims 4, 14, 24, and 34 are objected to as allowable over the prior art made of record, because they are dependent from the would be allowable dependent claims 1, 11, 21, and 31, respectively.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shaffer (U.S Patent No. 6,289,328 B2) teaches pattern vectors and eliminating outliers.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neveen Abel-Jalil whose telephone number is 571-272-4074. The examiner can normally be reached on 8:30AM-5: 30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 571-272-4038. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Neveen Abel-Jalil
December 10, 2004

SAM RIMELL
PRIMARY EXAMINER